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Hybrid-mesh Modelling & Validation of Woven Fabric Subjected to Medium Velocity Impact

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## Highlights

- A novel hybrid-mesh model is proposed to simulate undulated yarns of the fabric
- Mesoscale structures of Kevlar fabrics are captured using Micro CT imaging system
- Dynamic responses of an yarn is validated analytically and numerically
- Ballistic tests for woven Kevlar fabrics is carried out and validated numerically
- Fracture initiations, propagations and various energy components are investigated
- Significant reduction in computational time is achieved with the hybrid-mesh model

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